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08/211,873 06/03/94 VERDUIJN

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SAMPLE, D EXAMINER

A1M1/1002

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ART UNIT PAPER NUMBER

1108

9

DATE MAILED: 10/02/95

This is a communication from the examiner in charge of your application.
COMMISSIONER OF PATENTS AND TRADEMARKS

☒ This application has been examined ☒ Responsive to communication filed on 6/20/95 ☒ This action is made final.

A shortened statutory period for response to this action is set to expire 3 month(s), 0 days from the date of this letter.
Failure to respond within the period for response will cause the application to become abandoned. 35 U.S.C. 133

Part I THE FOLLOWING ATTACHMENT(S) ARE PART OF THIS ACTION:

- ☒ Notice of References Cited by Examiner, PTO-892.
- ☐ Notice of Draftsman's Patent Drawing Review, PTO-948.
- ☒ Notice of Art Cited by Applicant, PTO-1449.
- ☐ Notice of Informal Patent Application, PTO-152.
- ☐ Information on How to Effect Drawing Changes, PTO-1474.
- ☐

Part II SUMMARY OF ACTION

1. ☒ Claims 1-3, 5-27 are pending in the application.

Of the above, claims are withdrawn from consideration.

2. ☒ Claim 4 has been cancelled.

3. ☒ Claims 13, 22-27 are allowed.

4. ☒ Claims 1-3, 5-12, 14-18 are rejected.

5. ☒ Claims 19-21 are objected to.

6. ☐ Claims are subject to restriction or election requirement.

7. ☐ This application has been filed with informal drawings under 37 C.F.R. 1.85 which are acceptable for examination purposes.

8. ☐ Formal drawings are required in response to this Office action.

9. ☐ The corrected or substitute drawings have been received on Under 37 C.F.R. 1.84 these drawings are ☐ acceptable; ☐ not acceptable (see explanation or Notice of Draftsman's Patent Drawing Review, PTO-948).

10. ☐ The proposed additional or substitute sheet(s) of drawings, filed on has (have) been ☐ approved by the examiner; ☐ disapproved by the examiner (see explanation).

11. ☐ The proposed drawing correction, filed has been ☐ approved; ☐ disapproved (see explanation).

12. ☐ Acknowledgement is made of the claim for priority under 35 U.S.C. 119. The certified copy has ☐ been received ☐ not been received ☐ been filed in parent application, serial no. filed on

13. ☐ Since this application appears to be in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under Ex parte Quayle, 1935 C.D. 11; 453 O.G. 213.

14. ☐ Other

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1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

2. The following is a quotation of the first paragraph of 35 U.S.C. § 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

The specification is objected to under 35 U.S.C. § 112, first paragraph, as the specification as originally filed does not provide support for the invention as is now claimed.

The specification only describes crystallization at "a temperature of 120°C or less" or various other temperatures in the examples. The specification does not describe crystallization at any "elevated temperature." Therefore, the claim 18 step of crystallizing at an "elevated temperature" is not supported by the specification as originally filed.

3. Claims 5-12 and 18 are rejected under 35 U.S.C. § 112, first paragraph, for the reasons set forth in the objection to the specification.

As described above, the specification as originally filed does not support the invention as now claimed. Claims 5-12 are

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rejected for failing to correct the deficiencies of the base claim.

4. Claims 1-3, 5-7, 10-12 and 14-18 are rejected under 35 U.S.C. § 102(b) as anticipated by Calvert et al. (US 4,642,226).

Calvert et al. disclose a method of making zeolite beta wherein sodium aluminate, sodium hydroxide, dibenzyltrimethyl ammonium hydroxide and colloidal silica are mixed to form a gel then heated to 98°C under refluxing conditions (i.e., heated to boiling) and zeolite beta is allowed to crystallize (see lines 35-64 col. 7, particularly example 2). The reference discloses an additional step of forming a gel, however, applicants "comprising" terminology allows for additional steps.

The applicants claim 18 limitation of "sufficient organic directing agent to cause substantially complete dissolution of the silica source" is inherent in the reference disclosure of an organic templating agent to silica molar ratio of 0.62 (see line 50 col. 7). This molar ratio also anticipates instant claim 10.

In regards to instant claims 5 and 7, example 2 discloses the addition of NaAlO_2 to the reaction mixture during zeolite beta formation (see line 34 col. 7).

In regards to instant claim 12, example 2 discloses an OH^-/SiO_2 molar ratio of 0.34.

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In regards to the claims 1-3 and 14-17, the reference does not disclose the various morphological properties claimed by applicants. Since the method of making disclosed by the zeolite is the patentably the same, the properties are assumed to be inherent to the product.

5. Claims 8 and 9 are rejected under 35 U.S.C. § 103 as being unpatentable over Calvert et al. (US 4,642,226).

As described above, the reference discloses a method of making a molecular sieve that is the same as the instant invention. The examples disclosed by the reference relied upon for the above rejection do not disclose using a solid source of silica in general or silicic acid specifically (the instant claim 8 and 9 limitations). The reference does, however, teach silicic acid to be equivalent to the colloidal silica used in the examples (see lines 63-65 col. 2).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have used silicic acid as a source of silica in the method taught by Calvert et al. because silicic acid is a functionally equivalent to colloidal silica.

Note that the reference teaches the instant claim 8 limitation of vigorous stirring at col. 7 line 52.

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6. Claims 1-3, 5, 6, 10-12, and 14-18 are rejected under 35 U.S.C. § 102(b) as being anticipated by Argauer et al. (US 3,702,886).

Argauer et al. teach a method of making ZSM-5 by preparing an aqueous solution of tetrapropyl ammonium hydroxide, SiO_2 and sodium aluminate at 100°C and then crystallizing at a temperature of $100\text{-}175^\circ\text{C}$ (see lines 25-26 col. 8 and lines 4-5 col. 16).

In regards to claim 5, the reference teaches that aluminum and sodium are present in the synthesis mixture (see lines 25-30 col. 8).

In regards to claim 6, the reference teaches the formation of ZSM-5 (line 37 col. 8) which is an MFI type zeolite.

In regards to claim 10, the reference teaches an organic to silica molar ratio of 0.30 (see lines 30-31 col. 8). This teaching is further relied upon for the claim 18 limitation of sufficient organic "to cause substantially complete dissolution of the silica source."

In regards to claim 11, the reference teaches tetraalkyl ammonium cations in general and tetrapropyl ammonium hydroxide specifically (see lines 33-34 col. 2 and line 25 col. 8).

In regards to claim 12, the reference teaches an OH/SiO_2 ratio of 0.3-0.8 (see line 14 col. 16).

In regards to the claims 1-3 and 14-17, the reference does not disclose the various morphological properties claimed by

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applicants. Since the method of making disclosed by the zeolite is the patentably the same, the properties are assumed to be inherent to the product.

7. Applicant's arguments filed June 12, 1995 have been fully considered but they are not deemed to be persuasive.

Applicants argue that Calvert et al. fail to teach solubilizing the silica source before crystallization but instead teach forming a gel. This argument is not deemed persuasive. To form a gel, a sol first must first be formed. Therefore, inherent in the process of Culvert et al. is the solubilizing all of the silica source.

Applicants argue that Calvert et al. uses a crystallization temperature of 98°C in the examples and teaches a broad range of 80-120°C, and that applicants have shown unexpected results associated with crystallizing at lower temperatures. This argument is not deemed persuasive, because applicant's claim 18 does not specify a temperature. A showing of unexpected results must be commensurate in scope with the claims. However, applicants arguments are deemed persuasive with respect to instant claims 19-21.

Similarly, applicants argue unexpected results associated with the formation of ZSM-5 which overcomes the rejection over

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Argauer et al.. These arguments are not deemed persuasive for the same reasons as stated above.

8. Claims 19-21 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Applicants have shown unexpected results associated with the claimed temperature ranges.

9. Claims 13 and 22-27 are allowable over the prior art of record. The prior art does not teach or fairly suggest the claimed colloidal suspension.

10. Applicant's amendment necessitated the new grounds of rejection. Accordingly, **THIS ACTION IS MADE FINAL**. See M.P.E.P. § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 C.F.R. § 1.136(a).

A SHORTENED STATUTORY PERIOD FOR RESPONSE TO THIS FINAL ACTION IS SET TO EXPIRE THREE MONTHS FROM THE DATE OF THIS ACTION. IN THE EVENT A FIRST RESPONSE IS FILED WITHIN TWO MONTHS OF THE MAILING DATE OF THIS FINAL ACTION AND THE ADVISORY ACTION IS NOT MAILED UNTIL AFTER THE END OF THE THREE-MONTH SHORTENED STATUTORY PERIOD, THEN THE SHORTENED STATUTORY PERIOD WILL EXPIRE ON THE DATE THE ADVISORY ACTION IS MAILED, AND ANY EXTENSION FEE PURSUANT TO 37 C.F.R. § 1.136(a) WILL BE CALCULATED FROM THE MAILING DATE OF THE ADVISORY ACTION. IN NO EVENT WILL THE

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STATUTORY PERIOD FOR RESPONSE EXPIRE LATER THAN SIX MONTHS FROM THE DATE OF THIS FINAL ACTION.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to David Sample whose telephone number is (703)308-3582. The examiner can normally be reached Monday through Thursday from 6:30 AM to 4:00 PM. The examiner can also be reached on alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Bell, can be reached at (703)308-3823. The fax phone number for this Group is (703)305-3599.

Any inquiry of the general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is 308-0661.



DRS
October 1, 1995



MARK L. BELL
SUPERVISORY PATENT EXAMINER
GROUP 1100